

## CLAIMS

1. A radio communication apparatus comprising:

5 a transmission rate setter that sets a higher transmission rate on a subcarrier with a larger measurement value indicative of reception quality of a communicating party;

10 a peak detector that detects a suppression target peak such that a signal level of a transmission signal is greater than or equal to a first threshold;

15 a peak suppressor that suppresses the suppression target peak by a predetermined amount based on a transmission signal that is assigned to a subcarrier with a transmission rate set in the transmission rate setter below a second threshold; and

a transmitter that transmits the transmission signal with the suppression target peak suppressed in the peak suppressor.

20 2. The radio communication apparatus according to claim 1, further comprising:

a buffer that stores a transmission signal before the peak suppression in the peak suppressor,

25 wherein the peak suppressor replaces the suppressed transmission signal assigned to a high transmission rate subcarrier with a transmission rate set in the transmission rate setter being greater than or equal to

the second threshold with the transmission signal stored in the buffer corresponding to the suppressed transmission signal to assign to the high transmission rate subcarrier, while suppressing the suppression target peak in the transmission signal assigned to a subcarrier with a transmission rate set in the transmission rate setter below the second threshold.

3. The radio communication apparatus according to claim 1, wherein the peak suppressor suppresses the suppression target peak by eliminating an elimination target transmission signal assigned to a low transmission rate subcarrier with a transmission rate set in the transmission rate setter below the second threshold and assigning a peak suppression signal to the low transmission rate subcarrier.

4. The radio communication apparatus according to claim 1, wherein:

the peak detector performs processing of detecting the suppression target peak every time the peak suppressor performs peak suppression processing of suppressing the suppression target peak; and

the peak suppressor repeats the peak suppression processing until the suppression target peak is no longer detected in the peak detector, and changes the second threshold so as to increase the transmission rate every

time the peak suppression processing is performed.

5. A communication terminal apparatus having a radio communication apparatus, the radio communication  
5 apparatus comprising:

a transmission rate setter that sets a higher transmission rate on a subcarrier with a larger measurement value indicative of reception quality of a communicating party;

10 a peak detector that detects a suppression target peak such that a signal level of a transmission signal is greater than or equal to a first threshold;

a peak suppressor that suppresses the suppression target peak by a predetermined amount based on a  
15 transmission signal that is assigned to a subcarrier with a transmission rate set in the transmission rate setter below a second threshold; and

a transmitter that transmits the transmission signal with the suppression target peak suppressed in the peak  
20 suppressor.

6. A base station apparatus having a radio communication apparatus, comprising:

a transmission rate setter that sets a higher  
25 transmission rate on a subcarrier with a larger measurement value indicative of reception quality of a communicating party;

a peak detector that detects a suppression target peak such that a signal level of a transmission signal is more than or equal to a first threshold;

5 a peak suppressor that suppresses the suppression target peak by a predetermined amount based on a transmission signal that is assigned to a subcarrier with a transmission rate set in the transmission rate setter below a second threshold; and

10 a transmitter that transmits the transmission signal with the suppression target peak suppressed in the peak suppressor.

7. A peak suppressing method comprising:

15 setting a higher transmission rate on a subcarrier with a larger measurement value indicative of reception quality of a communicating party;

detecting a suppression target peak such that a signal level of a transmission signal is more than or equal to a first threshold; and

20 suppressing the suppression target peak by a predetermined amount based on a transmission signal that is assigned to a subcarrier with a transmission rate set below a second threshold.

25 8. The peak suppressing method according to claim 7, further comprising:

storing a transmission signal before the peak

suppression,

wherein a suppressed transmission signal assigned to a high-transmission rate subcarrier with a set transmission rate greater than or equal to the second threshold is replaced with the stored transmission signal corresponding to the suppressed transmission signal to assign the stored transmission signal to the high-transmission rate subcarrier, while the suppression target peak is suppressed using a transmission signal assigned to a subcarrier with a transmission rate set below the second threshold.

9. The peak suppressing method according to claim 7, wherein the suppression target peak is suppressed by eliminating an an elimination target transmission signal assigned to a low-transmission rate subcarrier with a transmission rate set below the second threshold is and assigning a peak suppression signal to the low-transmission rate subcarrier.